

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Revision of the Commission's Rules to) CC Docket No. 94-102
Ensure Compatibility with Enhanced)
911 Emergency Calling Systems)

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**SPRINT NEXTEL CORPORATION
REQUEST FOR LIMITED WAIVER**

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**SPRINT NEXTEL CORPORATION
REQUEST FOR LIMITED WAIVER**

Sprint Nextel Corporation ("SN")¹ seeks a limited and temporary waiver of the December 31, 2005 wireless Enhanced 911 ("E911") implementation deadline, requiring that 95% of SN's active subscriber handsets be location capable (the "December 2005 Benchmark" or "Benchmark").² This waiver is sought pursuant to 47 C.F.R. §1.3, the Nextel and Sprint Phase II Orders,³ and the E911 waiver standards established in the Fourth Memorandum and Order.⁴ SN is able to demonstrate "good cause" for the grant

¹ Sprint Nextel Corporation is the result of a merger between Sprint Corporation and Nextel Communications, Inc., which closed on August 12, 2005. The terms "Sprint" and "Nextel" refer to those entities as they existed prior to the closing of that transaction.

² 47 C.F.R. §20.18(g)(1)(v).

³ In the Matter of Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems, Wireless E911 Phase II Implementation Plan of Nextel Communications, Inc., *Order*, CC Docket No. 94-102, 16 FCC Rcd 18277 (2001) (*Nextel Phase II Order* or *Nextel Order*); Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems, Request for Waiver by Sprint Spectrum L.P. d/b/a Sprint PCS, *Order*, CC Docket No. 94-102, 16 FCC Rcd 18330 (2001) (*Sprint Phase II Order* or *Sprint Order*).

⁴ In the Matter of Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, *Fourth Memorandum Opinion and Order*, CC Docket 94-102, 15 FCC Rcd 17442 (2000) (*Fourth Memorandum Opinion and Order*) at ¶ 44.

of such a waiver⁵ and can further demonstrate that it has taken “concrete steps” to “come as close as possible to full compliance.”⁶ SN’s Waiver Request is “specific, focused, and limited in scope,” and contains a “clear path to full compliance” with the Commission’s rule.⁷ Grant of this waiver request is consistent with the public interest and will not undermine the public safety benefits of the rule.

I. INTRODUCTION AND SUMMARY

SN has aggressively pursued the Federal Communication Commission’s (“FCC”) E911 mandate since its adoption. SN was the first wireless carrier to begin selling Global Positioning Satellite (“GPS”) enabled handsets on its Code Division Multiple Access (“CDMA”) network, the first to deploy a Phase II handset-based system, the only wireless carrier to begin selling GPS-enabled devices by the October 1, 2001, FCC deadline, and the first carrier to convert 100% of its CDMA handset line up to GPS-enabled devices. Further, SN expects to be the first wireless carrier, and possibly only carrier, to convert 95% of its embedded handset base to GPS-enabled devices by December 31, 2005, again on its CDMA network.⁸ Unfortunately, for reasons beyond its control, and as more fully set forth below, SN must seek an extension of the December 31, 2005, deadline as a result of difficulties in converting customers being served on SN’s integrated Digital Enhanced Network (“iDEN™”) network to GPS-enabled devices.

⁵ 47 C.F.R. §1.3

⁶ *Fourth Memorandum Opinion and Order* at ¶44.

⁷ *Id.*

⁸ As of August 31, 2005, 92.72% of SN’s CDMA customers were using GPS-enabled devices.

SN's inability to meet the December 2005 Benchmark on its combined network is the result of events beyond its control and its waiver should be granted for good cause shown. Although SN was able to begin selling GPS-enabled handsets on its CDMA network by October 1, 2001, GPS-enabled handsets for its iDEN network were not available for another full year. iDEN was a unique technology which required that a Phase II solution be determined, designed and built from scratch with Motorola Inc. ("Motorola"), which was the single source for iDEN handsets. Moreover, after more than four million of these iDEN handsets were made available and had been extensively sold, a latent software defect surfaced which in effect disabled the GPS functionality in millions of GPS-capable devices already on SN's iDEN network. Despite SN's unprecedented reflash efforts, discussed more fully below, the vast majority of customers have not, to date, upgraded or returned these handsets. Finally, the nature of the SN iDEN customer base, which is more government, business and commercially based than typical for national carriers, and which has higher levels of customer satisfaction than experienced by other carriers, has resulted in significantly lower customer churn than anticipated by either SN or the FCC.

SN has made unprecedented efforts to comply with the FCC's Benchmark and those concrete steps are enumerated more fully herein. SN worked tirelessly with its handset vendors to develop GPS-enabled devices on an expedited basis for both SN's CDMA and iDEN networks. When the latent software defect affecting the iDEN base appeared, effectively eliminating over 4.7 million devices from its compliance efforts, Nextel, in conjunction with Motorola, immediately began massive upgrade efforts to correct the situation. Despite these efforts, SN has been unable to generate sufficient

customer response to change materially its compliance status and must now seek additional time to complete the conversion of its handset base.

SN's requested relief is specific, limited and narrow in scope, in that it addresses only one deadline within numerous E911 wireless requirements, and seeks no other extensions or waivers of the FCC's rules. SN continues to deploy Phase I and II services, participates in development of E911 technology and works extensively with the public safety community on issues arising in the E911 context. SN has deployed more than 2,600 Phase I systems and more than 1,700 Phase II systems in portions of forty-eight states, Puerto Rico and the District of Columbia.⁹ SN has also met all of its E911 disclosure and reporting obligations. SN has timely filed its required E911 quarterly reports and other requested updates and disclosed relevant details to the FCC regarding its E911 deployment, including information about the massive software problem it encountered on its iDEN network and the possibility that SN might be unable to meet the Benchmark because of the unique circumstances cited herein. SN seeks an extension of time only as a result of issues arising on its iDEN network.

Despite the setbacks experienced on its iDEN network, SN remains on a path to full compliance with the Commission's rules. As a result of its recently completed merger, SN will be able to take numerous additional steps to comply with the FCC's Benchmark. Specifically, SN will be conducting an aggressive marketing campaign to its own customers, which is expected to increase the number of handset changes by end

⁹ See In the Matter of Revision of the Commissions Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, *Sprint Corporation Fifteenth Quarterly E911 Implementation Report*, CC Docket 94-102, (August 1, 2005). As a general matter, the number of PSAPs deployed on the iDEN network are a subset of those deployed on the SN CDMA network.

users. As a result of the merger and the availability of attractive data services, high performance push to talk features, and attractive new handsets, SN will increase internal customer churn of non-GPS enabled handsets. SN is also actively examining the offering of new handsets for its iDEN network that will have dual mode capabilities and will be an attractive alternative for existing customers. SN is also pursuing other initiatives, such as discussions with Motorola to offer customers with non-GPS-enabled handsets incentives to upgrade or reflash handsets subject to the software glitch, increased budgets for upgrade activity and significant advertising of the advantages of new GPS-enabled devices and services to encourage customer upgrades.

SN expects, through aggressive and targeted marketing campaigns, to achieve a GPS-enabled handset penetration level of 80% by December 31, 2005. The GPS software problem, described in detail below, effectively changed location-capable handsets into non-GPS-capable handsets for purposes of the December 2005 Benchmark. Despite a number of marketplace factors working against it, the iDEN network was well on its way to substantial compliance with the FCC's rule.¹⁰ But for the GPS software issue, SN's penetration of GPS handsets would have been 80% by December 31, 2005, on its iDEN network alone.¹¹ (The SN CDMA network is still expected to meet the

¹⁰ See Rural Cellular Association and CTIA – The Wireless Association, Joint Petition For Suspension Or Waiver Of The Location-Capable Handset Penetration Deadline, CC Docket 94-102, filed June 30, 2005, at 4 (*CTIA Petition*).

¹¹ SN has excluded GPS-enabled devices affected by the software glitch from its compliance calculation. Prior to the merger, but taking the GPS software glitch into account, Nextel estimated that its penetration rate as of the Benchmark would have been 67%. It is noteworthy that the handsets which reduced Nextel's predicted penetration rate from 80% to 67% are, in fact, capable of delivering E911 Phase II location information. If customers with these handsets simply reflashed their software, which they have had multiple opportunities and incentives to do, *see* discussion *infra* at 25-27, these handsets could be considered E911 Phase II compliant.

deadline on a stand-alone basis). Based on current and predicted levels of churn, customer upgrades, and software reflash rates, SN believes it will achieve the 95% benchmark on its combined network by December 31, 2007. This extension request is consistent with waivers the Commission has granted other carriers which, like SN, have faced extraordinary circumstances that make strict adherence to the December 2005 Benchmark contrary to the public interest.¹²

II. SN HAS DEMONSTRATED GOOD CAUSE FOR WAIVER OF THE DECEMBER 2005 BENCHMARK

SN demonstrates herein good cause for a waiver of the Commission's rules under the standard articulated in its rules and precedent and the additional E911 waiver criteria specified in the *Fourth Memorandum Opinion and Order*.¹³ Section 1.3 of the Commission's rules states that waivers may be granted for "good cause shown."¹⁴ The Commission finds that "good cause" exists where the particular facts faced by the petitioner would make strict compliance inconsistent with the public interest, and where the relief requested would not undermine the policy served by the rule.¹⁵ As the court established in *WAIT Radio*, the promulgation of rules in the public interest "does not

¹² See Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; E911 Phase II Compliance Deadlines for Tier III Carriers, *Order*, CC Docket No. 94-102, 20 FCC Rcd 7709 (Apr. 1, 2005) at ¶¶ 9, 15-91 (granting waivers of the handset penetration rule until January 31, 2007, for various carriers) (*Tier III Waiver Order*).

¹³ See *Fourth Memorandum Opinion and Order* at ¶ 44.

¹⁴ 47 C.F.R. § 1.3.

¹⁵ See *WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969) (*WAIT Radio*); see also *Northeast Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990) (waiver appropriate where "particular facts would make strict compliance inconsistent with the public interest"); *Fourth Memorandum Opinion and Order* at ¶ 43.

relieve [an agency] of an obligation to seek out the ‘public interest’ in particular, individualized cases,” and it must take into account “considerations of hardship, equity, or more effective implementation of overall policy.”¹⁶ In tailoring this waiver standard to the E911 context, the FCC has stated that requests for waivers of the Phase II requirements should be “specific, focused, and limited in scope, and with a clear path to full compliance” and should demonstrate that the carrier has “undertake[n] concrete steps necessary to come as close as possible to full compliance” with the FCC’s rules.¹⁷

SN’s circumstances are consistent with those that justified the grant of a waiver for other wireless carriers, and the FCC has an obligation to treat similarly situated parties alike.¹⁸ In the *Tier III Waiver Order*, the FCC granted an extension of the handset penetration rule until January 31, 2007, to carriers upgrading their subscribers from a TDMA to a CDMA network.¹⁹ SN is faced with the similar issue of upgrading non-GPS iDEN customers to either a GPS-enabled CDMA phone or, because of the software glitch, manually upgrading the affected iDEN phone. Likewise, SN faced challenges in obtaining location-capable handsets for its iDEN network, just as the Tier III carriers faced problems in obtaining compliant TDMA equipment. In addition, SN’s efforts have been slowed by extraordinarily low customer churn numbers – an issue not faced by the

¹⁶ *WAIT Radio*, 418 F.2d at 1157, 1159.

¹⁷ *Fourth Memorandum Opinion and Order* at ¶44.

¹⁸ *See Melody Music, Inc. v. FCC*, 345 F.2d 730, 733 (D.C. Cir. 1965); *see also Adams Telcom, Inc. v. FCC*, 38 F.3d 576, 581 (D.C. Cir. 1994) (“We have recently reminded the FCC of the importance of treating similarly situated parties alike or providing an adequate justification for disparate treatment.”) (internal quotation marks omitted); *Ramon Rodriguez & Assoc.*, Memorandum Opinion and Order, 3 FCC Rcd 407, 408 (1988) (stating that *Melody Music* “broadly sets out the Commission’s obligation to assure comparable treatment of similarly situated parties”).

¹⁹ *Tier III Waiver Order* at ¶¶ 15-91.

Tier III carriers. SN's justification for this waiver is at least as, if not significantly more, compelling as that for the Tier III carriers.

SN's inability to meet the December 2005 Benchmark for its iDEN network is the result of three primary factors beyond its control, representing the type of particularized, extraordinary circumstances that make the grant of a waiver appropriate.²⁰ SN was unable to begin deployment of GPS-enabled handsets on its iDEN network until a full year after deploying its CDMA GPS-enabled devices because of the need to build a solution from scratch, working with Motorola, the provider of iDEN equipment. SN was subsequently the victim of a latent software defect in the GPS-enabled handsets Motorola had provided. Finally, SN was successful in reducing customer churn and in penetrating the business and government market. Unfortunately, these accomplishments had the unintended consequence of undermining earlier projections of handset replacement rates.

A. Lack of Available Compliant Handsets on a Timely Basis

SN was the only carrier to begin selling GPS-enabled CDMA handsets by the FCC's October 1, 2001, deadline. SN was able to meet this deadline in part because it used multiple CDMA handset vendors, including several newer handset vendors eager to gain market share in the United States, and was therefore able to spur quicker development of a GPS-enabled CDMA handset based upon the Qualcomm chipset. Even with extensive pressure from SN, and accelerated development by vendors, only one handset model was available by the FCC deadline.

²⁰ See *Fourth Memorandum Opinion and Order* at ¶ 43 ("we have recognized that there could be instances where technology-related issues or exceptional circumstances may mean that deployment of Phase II may not be possible" by the established deadline, and "could be dealt with through individual waivers").

SN, however, faced a much more difficult task with its iDEN network. The iDEN air interface is used by only a few other regional carriers. When faced with the Commission's Phase II mandate, Nextel considered a number of technological options, but quickly concluded that its unique iDEN network could accommodate only one possible compliant solution, a handset based GPS system provided by Motorola.²¹ Nextel had no option other than to develop a Phase II E911 solution in conjunction with its sole handset and network infrastructure supplier, Motorola, the world's only manufacturer of iDEN handsets and infrastructure.²²

Beginning in 2000, well before the FCC established Nextel's Phase II implementation timeline, Nextel and Motorola began to research, develop, test and install the network hardware and software necessary to develop, test and launch GPS-capable iDEN handsets. The unique nature of Motorola's iDEN technology meant that, at the time, no GPS capability existed for the iDEN platform, although a GPS solution was already under development for the more common platforms and air interfaces (*e.g.*, CDMA).²³ Motorola developed an iDEN GPS solution "from scratch," making it technologically infeasible to complete such development and deployment throughout Nextel's network prior to October 1, 2002. Indeed, it is undisputed that Nextel could not

²¹ See Nextel Communications, Inc. and Nextel Partners, Inc. Joint Report On Phase II Location Technology Implementation And Request For Waiver, CC Docket 94-102, filed November 9, 2000, at 11-17.

²² The only exception is one BlackBerry™ model, produced by Research In Motion.

²³ See, *e.g.*, Comments of QUALCOMM, Incorporated, CC Docket 94-102, filed Feb. 22, 2000, at 2 ("Technology trials [of the CDMA GPS chipset] began in 4Q99 and field trials are currently underway. Early design information release is scheduled for 2Q00, engineering sample general availability for 3Q00, interoperability testing in 4Q00 and, finally, customer trials and initial deployment for handsets in 1Q01.").

begin selling GPS-enabled handsets prior to October 2002.²⁴ Further, to ensure a Phase II service would be available to Nextel customers as soon as possible, Nextel and Motorola launched the i58sr GPS-capable handset in approximately *half* the time a typical iDEN handset is launched—an unprecedented accomplishment, particularly given the need to ensure reliable performance and the public safety implications of the new handset.

Despite these significant efforts by both parties, the launch of the GPS-enabled devices on its iDEN network was still a year behind the handsets on its CDMA network. This 12-month period represents approximately one quarter of the time the FCC made available to carriers in its *Fourth Memorandum and Order* to convert virtually all embedded handsets to GPS-enabled devices. In the *Nextel Phase II Order*, the Commission recognized that Nextel faced “special circumstances that affect its deployment of Phase II” because of the low market share of iDEN in the U.S. mobile telephony market, and Nextel’s reliance on a single provider of iDEN handsets and network equipment that would require development and modification to accommodate Automatic Location Information (“ALI”) capabilities.²⁵ Despite these equipment deployment delays, Nextel still expected to meet the FCC’s December 2005 Benchmark at the time of its waiver filing. Unfortunately, additional factors came into play which removed any chance for SN to meet the Benchmark on its iDEN network.

²⁴ See, e.g. *Nextel Phase II Order*, 16 FCC Rcd at 18284 ¶ 20 (“None of the commenters question or oppose this [Nextel proposed] schedule, and no one suggests that an earlier deployment schedule is feasible.”).

²⁵ *Nextel Phase II Order* at ¶ 19.

B. The GPS Software Defect

In setting the initial benchmark for carriers to begin selling and activating ALI-capable handsets, the Commission stated:

In the case of E911, we have recognized that there could be instances where *technology-related issues or exceptional circumstances* may mean that deployment of Phase II may not be possible by October 1, 2001, and indicated that these cases could be dealt with through individual waivers as these implementation issues are more precisely identified.²⁶

The situation facing SN as a result of the GPS software problem is precisely the type of “technology-related issue[] or special circumstance[]” that warrants a deviation from the general rule, and such deviation will serve the public interest.²⁷

At midnight Greenwich Mean Time, July 18, 2004, a latent software problem caused several million GPS-capable handsets in Nextel’s customers’ hands suddenly to cease transmitting E911 Phase II location information. A time keeping problem in the software of these handsets, as they were provided to Nextel by Motorola, rendered *all* GPS services unusable, including transmission of location information to Phase II-capable PSAPs. Any attempt to use the handsets’ location functionality caused the handset to shut down and begin a master reset. The software problem either directly or indirectly affected *all* of Nextel’s GPS-capable handsets. Overnight, Nextel went from having more than 4.7 million Phase II-compliant handsets on July 17, to zero Phase II-compliant handsets on July 18. On July 19, 2004, Motorola notified Nextel of the

²⁶ *Fourth Memorandum Opinion and Order* at ¶ 43 (emphasis added).

²⁷ *E911 Fourth Memorandum Opinion and Order* at ¶43 & n.75, citing *Northeast Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990).

software problem affecting Motorola i205, i305, i530, i710, i730, i733, i736, and i830 handsets.²⁸

The problem that affected Motorola's software in the Falcon handsets was related to the unique manner in which GPS satellites keep time. Each of the GPS satellites in orbit contains an atomic clock that provides extremely precise time information for navigation and worldwide time synchronization. GPS satellites express time as the number of weeks (calculated to the second) since midnight, Greenwich Mean Time, on January 6, 1980. Because the GPS Week number is transmitted as a 10-bit binary integer, it can only count from zero to 1,023 (*i.e.*, $2^{10}=1,024$). Thus, this 10-digit binary integer "rolled over" to a value of 0000 after midnight, Greenwich Mean Time, on August 21, 1999, starting the GPS Week count over. It was well known that software which did not take this August 21, 1999, rollover into account could render GPS units in use at the time unable to locate satellites, or even cause them to display inaccurate latitude/longitudes. This issue is well documented in GPS standards documents.

The problem that effected Motorola's software in Nextel's Falcon handsets was related to the "end-of-the-week" issue described above. Midnight, Greenwich Mean Time, July 18, 2004—the time when Nextel's Falcon handsets would reboot upon receiving a GPS fix—was exactly 256 weeks from August 21, 1999.²⁹ Expressing the number 256 required one bit in addition to the eight bits that comprise a byte in computer memory. Although Motorola had planned for this to occur, evidently the testing that was

²⁸ These models comprise Motorola's "Falcon" series handsets.

²⁹ A byte, the basic building block of computer memory, typically consists of 8 binary digits, known as bits. Thus, a byte can be used to express numbers in the range of 0 through 255 (*i.e.*, $2^8=256$). To express a number larger than this figure requires additional bits. Numbers between 256 and 511 require a ninth bit (*i.e.*, $2^9=512$).

done to the handsets prior to their production failed to disclose that a “1” in the 9th, or “rollover,” bit would lead to a malfunction serious enough to cause handsets to restart themselves when attempting a GPS fix.

Nextel took steps to ensure that this software problem, which shut down the handset upon any attempt at a GPS location fix, did not cause 911 calls from the affected handsets to drop. Nextel temporarily disabled the network component of its Phase II E911 GPS service, thus transmitting to PSAPs only the caller’s voice, nearest cell site location, and call-back number, *i.e.*, Phase I E911, in those PSAP areas deployed with E911 Phase I or Phase II service. Nextel immediately informed all of its Phase II-deployed PSAPs of the software problem and of the need to temporarily limit Nextel’s E911 functionality to Phase I. Nextel also notified the FCC of the issue and provided information regarding its plans to address the problem.

The permanent solution to this GPS software problem required a two-part fix: (1) an upgrade to Nextel’s network, and (2) new software in all affected GPS handsets, as well as the i58sr and i88s model handsets that had not been directly impacted by the glitch.³⁰ Although Nextel’s network was still fully capable of transmitting Phase II location information to Phase II-capable PSAPs, Nextel had to make changes to its network so it could distinguish between calls placed from handsets without updated software and handsets with updated software. This network update re-enabled the transmission of latitude and longitude to Phase II deployed PSAPs and was successfully deployed in Nextel’s network on July 25, 2004, just six days after discovery of the glitch.

³⁰ The network changes needed to differentiate between the handsets with old versus new software required that Nextel also upgrade the software in its i58sr and i88s GPS handsets, even though they were not directly impacted by the GPS software defect.

The second part of the solution required updating the Motorola software in the affected handsets, including those already in customers' hands as well as those in Nextel's and Motorola's inventories. To address this phase of the fix, Nextel and Motorola embarked on an unprecedented campaign to upgrade handset software as quickly as possible. First, Motorola had to develop a unique software fix for each model of affected handset. Motorola focused initial efforts on those handsets most widely used by Nextel customers. Quite literally the day after a new software patch was developed and tested, Nextel and Motorola employees began reflashing those handsets over which they exercised control (*i.e.*, handsets at Nextel distribution centers and handsets sitting on the shelves of Nextel dealers). Since developing and testing software for the affected GPS handsets, Nextel and Motorola have undertaken unprecedented efforts to encourage Nextel's customers to upgrade their handsets' software. These efforts, which are described in greater detail in Section III.C below, have produced upgraded iDEN handsets but not in numbers that approach the 95% requirement.

C. SN's Low Churn Rate and Unique Customer Base

In extending the Benchmark by one year (from 2004 to 2005) and in changing the Benchmark from a 100% "reasonable efforts" standard to a 95% penetration standard, the FCC recognized that some percentage of customers might never choose to abandon certain older handset models. The percentage of such customers, however, could only be the subject of speculation at that time, and the record contains no data that would indicate that 5% was—or is—an accurate estimate of the number of customers that might refuse to upgrade their existing handsets. The date for reaching this percentage was also based upon certain assumptions about industry churn rates. In fact, SN's iDEN customer base

has demonstrated consistently lower churn than that predicted by the FCC. This reduced churn is the result of positive business practices by SN and its unique customer base of small business and government users. This increased consumer satisfaction, however, has also had the unintended consequence of making it more difficult to reach the 95% Benchmark.

1. *SN's churn rate was substantially lower than was predicted at the time the benchmarks were established in the Nextel Phase II Order.*

During the economic downturn of 2001, Nextel significantly increased its focus on customer retention by improving customer service and network quality. From a business perspective, this effort was quite successful. Nextel had one of the lowest churn rates in the industry for the past several years. In 2000, when Nextel sought its waiver of Phase II deployment benchmarks, an integral part of its calculation that it could achieve 95% penetration by December 31, 2005, was a churn rate of 2.5% per month (or 30% per year).³¹ Since then, as a result of Nextel's intense focus on customer service, Nextel's churn rate steadily declined from 2.3% in 2001, to 2.1% in 2002, to 1.6% in 2003 and 2004, and a mere 1.4% in the second quarter of 2005.³² Had churn remained at 2.5% per month, Nextel, as a stand-alone entity, would have achieved 95% GPS handset penetration by the end of the first quarter of 2006 (excluding the impact caused by the

³¹ See Letter to Blaise Scinto and Dan Grosh, Wireless Telecommunications Bureau, Federal Communications Commission, from Larry R. Krevor, Nextel Communications, Inc., dated April 2, 2001, at 5.

³² See Form 10-Q for the Quarterly Period Ended September 30, 2004, filed by Nextel Communications, Inc., at 27, Form 10-K for the Fiscal Year Ended December 31, 2003, filed by Nextel Communications, Inc., at 47, and Form 10-K for the Fiscal Year Ended December 31, 2002, filed by Nextel Communications, Inc., at 45. See also "Nextel Reports Record 2004 Results," *Business Wire* (Feb. 17, 2005) and "Nextel Reports Record First Quarter Results," *Business Wire* (April 28, 2005).

GPS software glitch). Ironically, however, achieving high rates of GPS handset penetration in Nextel's customer base through churn is necessarily at odds with SN's efforts to satisfy and retain its customers.³³

SN is not alone in noting this adverse relationship between churn rates and E911 Phase II compliance. The Commission, the National Emergency Number Association ("NENA"), and the Commission's independent analyst on Phase II E911 matters, Professor Dale Hatfield, have all recognized the inconsistent goals of low churn rates (which are synonymous with satisfied customers) and achieving 95% GPS handset penetration. NENA, in its SWAT Research Paper,³⁴ notes, "[h]andset players are highly subject to the degree to which consumer demand drives replacement of handsets. As

³³ This point is most aptly demonstrated by analyzing Nextel's handset penetration statistics assuming its churn rates remained at their 2000-01 levels, when the Commission established Nextel's benchmarks. Using the 2000 projected churn rates for 2004 and 2005 of 2.3 and 2.2 percent respectively, and assuming the unanticipated GPS software problem had not occurred, Nextel would likely have achieved 93.3% GPS handset penetration by December 31, 2005.

³⁴ See generally *Analysis of the E911 Challenge*, prepared by Monitor Group and sponsored by the National Emergency Number Association (Dec. 2003) ("SWAT Research Paper"). In September 2002, nearly one year after the *Nextel Phase II Order*, NENA convened a cross-section of E911 stakeholders including representatives from the Association of Public-Safety Communications Officials, Inc. ("APCO"), the National Association of State 911 Administrators ("NASNA"), national, regional and rural wireless carriers, LECs, E911 vendors, and representatives of state legislative and executive branches, to create a Strategic Wireless Action Team ("SWAT"). The SWAT concept was developed by NENA leadership and was funded through a grant from "Wireless E911: The PSAP Readiness Fund," an independent non-profit organization established by Nextel. This group participated in numerous meetings, conference calls and roundtables throughout the country for over a year. As part of the initiative, NENA engaged Monitor Group, a global strategic advisory firm, as an advisor and researcher to author summary and research documents on SWAT's work. See *Accelerating Deployment of Nationwide E911: Summary Findings of the NENA SWAT E911 Stakeholders' Initiative*, prepared by Monitor Group and sponsored by the National Emergency Number Association (Dec. 2003) ("SWAT Summary Paper"). Both documents address a wide variety of E911-related topics including, but not limited to, carrier and PSAP cost recovery, coordination and oversight, rural carrier requirements, future proofing and carrier deployment timeline considerations.

industry growth has slowed and carriers have begun to focus on improving retention, churn has been reduced and natural handset replacement cycles have been extended.”³⁵ Moreover, “those providers with significantly lower churn relative to their competitors may be differentially penalized. . . .”³⁶

Similarly, Professor Hatfield stated that in his conversations with wireless carriers, they noted that “their lower churn rate was a sign of customer satisfaction and that, in order to meet handset deployment requirements, they would have to offer deeper discounts on handsets to meet their rollout targets. They claimed, in effect, that they were being penalized for their success.”³⁷ Based in part on these concerns, Professor Hatfield agreed with the notion that “additional flexibility – rather than rigid rules – may, in some cases at least, actually facilitate the rollout of wireless E911 services.”³⁸

Indeed, the Commission understood and relied upon the impact that relatively high churn rates would have on changing out handsets when, earlier in the E911 proceeding, it established a 100% penetration requirement of December 31, 2004.³⁹ The

³⁵ SWAT Research Paper at 45.

³⁶ *Id.* (emphasis added).

³⁷ “A Report on Technical and Operational Issues Impacting the Provision of Wireless Enhanced 911 Services,” Professor Dale N. Hatfield at 44 (rel. October 16, 2002) (“Hatfield Report”).

³⁸ *Id.* at 45.

³⁹ Revision of the Commission’s Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems, *Third Report and Order*, CC Docket No. 94-102 (1999) (“*Third Report and Order*”). In the *Third Report and Order*, the Commission set a December 31, 2004, date for carriers to “undertake reasonable efforts to achieve 100 percent penetration of ALI-capable handsets in [their] total subscriber base[s].” *Third Report and Order* at ¶ 42. This date was subsequently changed to 95% penetration by December 31, 2005. See *Fourth Memorandum Opinion and Order* at ¶ 37.

Commission noted in 1999 that an admittedly *optimistic* estimate found that with an annual churn of 24% per year (*i.e.*, 2% per month), and with high projections of new sales and retrofits, 100% of handsets would be ALI-capable within three years.⁴⁰

SN's improved network performance and customer satisfaction is both a positive business development and consistent with the FCC's goal of ensuring that wireless carriers provide quality service to their customers. Unfortunately, the unintended consequence is that the churn rates for SN's iDEN network have been significantly lower than either the FCC or Nextel expected when the *Nextel Phase II Order* was issued.

2. *SN's unique customer base has slowed replacement of older handsets.*

Prior to the merger with Sprint, Nextel's principal marketing was focused on small, medium, and large businesses, government organizations, and high value generating individuals. This focus resulted in Nextel's gaining a valuable customer base, with the highest customer loyalty rate, the highest monthly average revenue per customer and the highest lifetime revenue per customer of any nationwide wireless service provider.⁴¹

These customers, as a group, are particularly sensitive to changes in the economy and to the limitations of operating in a business environment. Thus, they are much more sensitive to the costs of upgrading their handsets. Additionally, a business or government customer's investment in new handsets is typically much greater than an individual

⁴⁰ *Third Report and Order* at ¶ 50. The Commission also cited another report estimating 25.63% churn per year, leading only to a 73% penetration level over four years. *Id.*

⁴¹ See Form 10-K for the fiscal year ended December 31, 2004, filed by Nextel Communications, Inc. at 2.

customer's, given that the business or government user is often faced with upgrading multiple handsets (perhaps hundreds, or even thousands) rather than just one or two. Furthermore, government customers—which account for 7.6% of Nextel's customer base—are often constrained in their ability to purchase upgraded equipment, given their reliance on budgets that are dictated by legislative bodies. Thus, these customers want to extract as much value from their current handsets as possible: if there is no business case to justify a capital expenditure on new handsets, business and government customers, in particular, are unlikely to do so.

Business users simply do not upgrade handsets at the same pace as individuals. Of the SN iDEN customers with handsets older than three years (thus non-GPS-capable) only 21.6% are individuals. Corporate, small business, and government users make up 78.4% of SN's iDEN customers using handsets aged three years or older. However, the usage of iDEN handsets that are less than three years old is markedly different: 47% of those are in the hands of individuals, while only 53% are either corporate, small business, or government owned. These are precisely the customers most difficult to convince to switch to a new handset without a perceived economic rationale for doing so.

Finally, as noted above, some group of customers may never chose to upgrade their existing handsets. As of April 30, 2005, approximately 22.7% of Nextel's customer base was using iDEN handsets that are more than three years old⁴² and approximately 19.8% of SN's CDMA customers are using handsets more than three years old.⁴³ For

⁴² iDEN handsets more than three years old are almost all non-GPS enabled devices.

⁴³ Because SN was able to begin selling GPS-enabled devices on its CDMA network a full year earlier than on its iDEN network, SN is able to report a projected 95% GPS penetration rate on its CDMA network even though 19% of its handsets are more than three years old.

whatever reasons, many of these customers simply do not want to upgrade their handset. This may be due to the inconvenience of reprogramming speed dial lists, learning new features and commands or losing the investment in matching accessories, such as car chargers, extra batteries or holsters. Many customers simply do not want new handsets no matter how low the price.

Indeed, as Nextel, and now SN, progress ever closer to meeting the Commission's 95% deadline, month-over-month increases in GPS handset penetration are slowing considerably. In May of this year, the number of customers upgrading an iDEN GPS handset to another iDEN GPS handset equaled the number upgrading from a *non*-GPS iDEN handset to a GPS iDEN handset. In other words, those customers most willing to upgrade their handsets have largely been reached and the remaining non-GPS enabled iDEN customers are expected to be significantly more difficult to convert.

This principle was well demonstrated on SN's CDMA network. While the GPS penetration percentage was increasing at rates in excess of 2% per month a year ago, that number has now reduced to just over one-half of one percent per month. Moreover, that one-half percent increase is likely the result of new additions to the network, and not conversion of older non-GPS enabled devices. Indeed, SN had approximately 9,000 end users, as of January 2005, who still used the original "brick" phone issued when Sprint launched the CDMA network in 1996. These numbers illustrate the difficulty of convincing consumers otherwise satisfied with their current handset to invest the time to upgrade to a new one.⁴⁴

⁴⁴ Expense, on the other hand, can hardly be considered a factor in customers' retention of older, non-GPS-capable handsets. SN currently offers a number of iDEN-

At some point, the issue becomes one of personal choice by the consumer. Under these circumstances it is problematic for government or industry to mandate that consumers abandon their personal property. Strictly enforcing the Commission's mandate would require that potentially millions of SN's subscribers—using handsets that are exactly what they want and need to effectively and efficiently communicate—trade in their handsets for a new GPS-equipped phone. For a substantial percentage, this forced handset replacement will not provide any added E911 safety value because Phase II services have not been installed by the majority of Public Safety Answering Points ("PSAPs"). Fully 46% of Nextel subscribers have never upgraded their handsets. If these customers are satisfied with their current service, have no desire to acquire a GPS handset, and potentially gain no benefit from such an upgrade, then the Commission should not force them to do so.⁴⁵

III. SN HAS TAKEN CONCRETE STEPS TO COME AS CLOSE AS POSSIBLE TO FULL COMPLIANCE WITH THE FCC'S RULES

Consistent with the Commission's E911-specific waiver standard, both Sprint and Nextel have taken, and SN will continue to take, "concrete steps to come as close as possible to full compliance" with the FCC's E911 mandate.⁴⁶

and CDMA-based GPS-capable handsets that, when combined with a contract for service, are free of charge.

⁴⁵ See discussion, *infra* at 33, regarding the very low exchange rate among customers who depend on GPS-based services when offered a free handset with reflashed software.

⁴⁶ *Fourth Memorandum Opinion and Order* at ¶ 44.

A. SN Has Aggressively Pursued Compliance with the FCC's E911 Mandate, Including the GPS Handset Penetration Benchmark.

SN was the only carrier to begin selling GPS-enabled devices on its CDMA network by the FCC's October 1, 2001 deadline. Since that time, SN has introduced more than 40 different GPS-enabled CDMA handset models and has placed more than 40 million GPS CDMA handsets into its distribution chain. By July 2003, virtually 100% of SN's new CDMA handset activations were GPS-enabled. As of August 31, 2005, SN's embedded base of CDMA handsets exceeded 92%.

SN was the first wireless carrier to launch a handset-based Phase II system, completing a statewide deployment for the State of Delaware in December of 2001 on its CDMA network. SN completed installation of all national platforms, switch, and cell site upgrades required to support Phase II E911 service across its entire CDMA network on June 14, 2002, more than a month ahead of the Commission's deadline, and before any other wireless carrier. SN has been capable of supporting Phase II implementations nationwide for more than three years – again, on its CDMA network. SN met, or exceeded, every E911 benchmark set forth in the *Sprint Phase II Order*.

SN offered its first iDEN-based GPS-capable handset and deployed to its first iDEN based Phase II PSAP in York County, Virginia, on October 1, 2002. SN, in cooperation with Motorola and other parties critical to successfully launching this new technology within such an unusually short timeframe, managed to achieve the October 1, 2002 launch only through the commitment of extraordinary efforts and unprecedented coordination among numerous entities.⁴⁷

⁴⁷ This was particularly demanding given that this new location service was being launched as a public safety tool before having been tested in the commercial sector.

SN met or exceeded each of the interim Phase II benchmarks established in the *Nextel Phase II Order* (with only a short deviation from the December 1, 2004, 100% GPS activation requirement), has a product portfolio that includes only GPS-capable iDEN handsets, and introduces only new GPS-capable iDEN models. As of January 2004, over 50% of SN's new iDEN handset activations since December 1, 2003, were GPS-capable—well in advance of Nextel's third benchmark (requiring that 50% of new handsets activated between December 1, 2003, and November 30, 2004, be GPS-capable). Moreover, as of the end of February 2005, virtually 100% of SN's new iDEN handset activations, with the exception of one BlackBerry™ model and a handful of legacy models, have been GPS-capable.⁴⁸

As these facts demonstrate, SN has actively pursued the Commission's December 2005 Benchmark and has not in any sense “undertake[n] a minimalist approach” toward compliance.⁴⁹ Since early 2005, nearly every handset activated on SN's iDEN and CDMA networks have been GPS-capable. Indeed, SN reached this milestone on its CDMA network by July of 2003. As discussed above, the CDMA network, on its own, was likely to have met the requirement that 95% of its customer base be using GPS-capable handsets by the Benchmark date. Absent the software glitch, the iDEN network would have achieved approximately 80% GPS penetration by December 31, 2005, given its aggressive handset upgrade promotional efforts and the substantial growth of GPS handsets on the iDEN network throughout 2004. As a newly merged company, efforts to increase the base of GPS capable handsets will continue.

⁴⁸ SN has not purchased non-GPS iDEN models for new sales since early in 2004. SN has not purchased non-GPS enabled CDMA models since January of 2003.

⁴⁹ *Fourth Memorandum and Order* at ¶ 45.